is such that a rotor side sheet coil is attached to both sides of a disk-shaped soft magnetic material on which are formed a secondary side pattern of a rotary transformer and a resolver excitation phase pattern, and a stator side sheet coil having a rotary transformer primary side pattern formed on a disk-shaped soft magnetic material is attached to one of said stators opposed to said rotary transformer secondary pattern, and a stator side sheet coil having a resolver detection phase pattern formed on a disk-shaped soft magnetic material is attached to the other of said stators opposed to said resolver excitation phase pattern,

wherein said stator side sheet coil is formed of a single sheet composed of a disk having said resolver detection phase pattern formed, a disk having said rotary transformer primary side pattern formed, and a linear portion that links the corresponding two disks with each other.

4. (Amended) The resolver using a sheet coil as set forth in Claim 1 or 2, wherein said rotary transformer secondary side pattern formed on both sides of the disk is a pattern eddy from outside to inside, and both the patterns are connected to each other in series, and said resolver excitation phase pattern that is formed at both sides of the disk is a pattern eddying by 2N times in the circumferential direction, where N is a natural number, and the center of the eddy pattern on the surface side is disposed at the same position of the eddy pattern on the rear side in the circumferential direction, and 4N eddy patterns are connected to each other in series, wherein the axial multiple angle is NX, where NX means the resolver has a pole logarithm of N.

5. (Amended) The resolver using a sheet coil as set forth in Claim 1, wherein said rotary

transformer primary side pattern is formed on both sides of the disk, and both patterns eddying from outside to inside are connected to each other in series, and said resolver detection phase pattern is formed on both sides of the disk, and one side of which is an "α" and the other of which is a "β" phase, wherein 2N patterns eddying in the circumferential direction are disposed, wherein N is a natural number, and the center positions of the eddy portions of the "α" phase and the "β" phase slip by 90/N° from each other in the circumferential direction, and

2N eddy patterns are connected to each other in series to cause the axial multiple angle to become NX, where NX means the resolver has a pole logarithm of N.

6. (Twice Amended) The resolver using a sheet coil as set forth in Claim 1 or Claim 2, wherein one of either the outer diameter of said rotary transformer secondary side pattern or that of said rotary transformer primary side pattern is made larger than the other thereof.

7. (Twice Amended) The resolver using a sheet coil as set forth in Claim 1 or Claim 2, wherein the radius r_2 of the extremely outer conductor of said rotary transformer secondary side pattern and radius r_1 of the extremely outer conductor of said rotary transformer primary side pattern is established so as $0 < r_2 - r_1 \leq 4 \times \lambda_2$ or $0 < r_1 - r_2 \leq 4 \text{ x } \lambda_1$ where the pattern pitch of the rotary transformer secondary side pattern is λ_2 and the pattern pitch of the rotary transformer primary side pattern is λ_1.

8. (Twice Amended) The resolver using a sheet coil as set forth in Claim 1 or Claim 2,

wherein the outer diameter of said resolver excitation phase pattern is made larger than the outer diameter of the resolver detection phase pattern while the inner diameter of the resolver excitation phase pattern is made smaller than the inner diameter of the resolver detection phase pattern, or the outer diameter of the above-described detection phase pattern is made larger than the outer diameter of the above-described excitation phase pattern while the inner diameter of the detection phase pattern is made smaller than the inner diameter of the excitation phase pattern.

9. (Twice Amended) The resolver using a sheet coil as set forth in Claim 1 or Claim 2, wherein, where the pattern pitch of the resolver detection phase pattern is λ_θ, and the pattern pitch of the solver detection phase pattern is λ_α, the radious $r_{\theta o}$ of the extremely outer conductor of the resolver excitation phase pattern and the radious $r_{\alpha o}$ of the extremely outer conductor of the rotary transformer primary side pattern, or the radius $r_{\theta I}$ of the extremely inner conductor of the resolver excitation phase pattern and the radius $r_{\alpha I}$ of the extremely inner conductor of the rotary transformer primary side pattern are established so as to become

$0 < r_{\alpha o} - r_{\theta o} \leq 4 \times \lambda_\alpha$

and

$0 < r_{\theta i} - r_{\alpha i} \leq 4 \times \lambda_\alpha$

or

$0 < r_{\theta o} - r_{\alpha o} \leq 4 \times \lambda_\theta$

and

$0 < r_{\alpha i} - r_{\theta i} \leq 4 \times \lambda_\theta$.